



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,372	02/20/2004	Tetsuya Niitsuma	04097 /LH	2407
1933	7590	01/17/2008	EXAMINER	
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 Fifth Avenue 16TH Floor NEW YORK, NY 10001-7708			YEH, EUENG NAN	
		ART UNIT	PAPER NUMBER	
		2624		
		MAIL DATE	DELIVERY MODE	
		01/17/2008	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/783,372	NIITSUMA, TETSUYA
Examiner	Art Unit	
Eueng-nan Yeh	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 November 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on Nov 6, 2007 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

FINAL ACTION

Response to Amendment

1. The following Office Action is responsive to the amendment and remarks received on November 6, 2007. Original claims 1-12 and newly added claims 13-15 remain pending. In response to the amendment, the previous drawing "objections" are withdrawn .

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 to 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Haraguchi et al. (US 6,002,498) and Ohkawa (US 2003/0038984 A1).

Regarding claims 1, 9, 10, and 13, Haraguchi discloses: a plurality of image sensors having different spectral characteristics from one another ("... a color image is read by an image reading apparatus in a way of reflected light and

a print is made by an image forming apparatus based on spectral density the color image read by the image forming apparatus in the wavelength region of each primary color" at Haraguchi column 4, line 26. See also figure 2, numeral 32 is the image reading apparatus, "spectral density is an optical density in the red wavelength region, the green wavelength region or the blue wavelength region obtained by an image reading apparatus such as a color scanner ..." at column 7, line 21. Furthermore, as depicted in figure 4 which shows that sensors have different spectral characteristics from one another);

a layered image generation section which generates a plurality of pieces of layered image data based on an output from the plurality of image sensors obtained by reading a document as an object to be read (as depicted in figure 2 "FIG. 2 shows an image forming apparatus that reads a color image through reflected light and makes a print ..." at column 9, line 44. See also figure 1, numeral 26 is the color chip which is the layered image generation section "image reading apparatus 22, reads through reflected light, Y image, M image and C image and a mixed-dye image of the color chip 26 to obtain the spectral densities each image in the red, green and blue wavelength regions" at column 10, line 39. Thus, plurality of document areas, first, second, and third estimated document areas, are formed);

Haraguchi discloses the formation of layered images from primary colors of the image reading apparatus.

Haraguchi does not explicitly disclose how to detect and process the document area.

Ohkawa, in the same field of endeavor of image processing ("particularly to an image processing apparatus having an erasure means by which unnecessary image formation about an area outside the document is not conducted" in paragraph 1, line2), teaches:

a comparison section which (i) compares a threshold of each of the plurality of pieces of layered image data against a pixel value of each of the plurality of pieces of layered image data, the threshold being predetermined corresponding to each of the plurality of pieces of layered image data, and (ii) judges existence of a document image on each pixel (as depicted in figure 5, label JJC is the comparison section. See also the top portion of figure 14 where the horizontal dashed line, a threshold value line THL, used to compare with each pixel along the scan line to determine the document area. "When it is the manual setting ... may select and set any one of 5 kinds of threshold levels THL (figure 9, numeral 94a) which is predetermined according to the background density" in paragraph 126, line 1);

an estimated document area determination section which determines an estimated document area of each of the plurality of pieces of layered image data based on an output from the comparison section (as depicted in figure 5, label JJR is the estimated document area determination section. This estimation process based on said comparison section is depicted in the lower portion of figure 14);

a document area detection section which detects a document area based on the estimated document area of each of the plurality of pieces of layered image data (as depicted in figure 5, label JJM is the document area detection section. "The above result

is stored in an area storing memory JJM as the area information" in paragraph 137, line 1);

a document reading section which reads the document based on the document area detected by the document area detection section (as depicted in figure 5, label J4 is the document reading section; "The above result is stored in an area storing memory JJM ... in the gamma curve processing circuit J4, the gamma curve setting is conducted so that the outside document area NSR is not image formed ..." in paragraph 137, line 1).

Regarding claim 9, an image formation section which forms an image bases on image data of the document read by the document reading section (as depicted in Ohkawa figure 4, after document be read in the image processing section labeled as J, data will be transferred through data bus, labeled as B, to numeral 30 the image forming section.)

It would have been obvious at the time the invention was made to one of ordinary skill in the art to include the multiple layered image reading apparatus Haraguchi made with document area determination technique as taught by Ohkawa, in order not only to provide "more accurate outside of the document erasure function can be attained" in paragraph 14, line 9, but also to avoid "a failure in which the unnecessary image which is quite unexpected is formed on the recording material" in paragraph 13, line 7.

Regarding claim 2, the document area detection section detects an area included in any one of the estimated document area of each of the plurality of pieces of layered image data as the document area (the Haraguchi and Ohkawa combination will provide

plurality of layered image data for document area detection. In light of Ohkawa's invention, the document area will include not just one particular color area but any one of the estimated document area of plurality of layered image data in order to have a better coverage).

Regarding claims 3 and 11, the plurality of image sensors include a color image sensor comprising three sensors having spectral sensitivity which respectively peaks at R (red), G (green) and B (blue) ("As an image reading apparatus, it is possible to use a color image scanner wherein a color reflection original is fixed, a 5000-pixel CCD linear image sensor having on its incident light side each of B, G and R filters is provided for each of B, G and R for primary scanning ..." at Haraguchi column 20 line 56).

Regarding claims 4 and 12, the threshold of each of the plurality of pieces of layered image data is changeable ("... calculating the threshold level THL, other than the foot or valley (under peak), various character points in which the histogram data shows, can be used ..." in Ohkawa paragraph 114, line 2. See also Ohkawa figure 9, numerals 94a-94d, user can also push any button to select threshold level THL).

Regarding claim 5,

a platen on which the document is placed (as depicted in Ohkawa figure 2, numeral 11 is the platen glass. "The document S is directly placed on a platen glass 11 so that its

document surface (the surface on which the image is formed) is opposite to the platen glass 11 surface" in Ohkawa paragraph 59, line 1);
a platen cover openably mounted on the platen (as depicted in Ohkawa figure 2, numeral 11C is the platen cover in the open state);
a platen cover open detection section for detecting an opened state of the platen cover (as depicted in Ohkawa figure 2, label OSS is the cover detection sensor. "the open and close condition of the cover 11C is confirmed according to the output of the cover detection sensor OSS" in Ohkawa paragraph 80, line 6);
operation of detecting the document by the document area detection section is performed based on a signal output from the platen cover open detection section (as depicted in Ohkawa figure 10, "the peak P1 generally expresses the existence of the outside document area NSR, and the peak P2 generally expresses the existence of the document area SR ... In this connection, the meaning that the platen cover is made the opened condition as described above, is seen here ..." in paragraph 93, line 1).

Regarding claim 6, an automatic threshold setting section for setting the threshold of each of the plurality of pieces of layered image data based on a signal output from the plurality of image sensors in a state that the platen cover open detection section detects the opened state of the platen cover and the document is not placed on the platen (as depicted in Ohkawa figure 5, label JH is the automatic threshold setting section. As illustrated in figure 10, the peak P1 seen left in figure 10, "it is a totaled result of the luminance data value acquired according to the sky shot" in paragraph 91,

line 5. "In this connection, the meaning that the platen cover is made the opened condition as described above, is seen herein. It is because the fact that sky shot is realized ..." in paragraph 93, line 8. See also "an area in which the document exists and an area in which the document does not exist is distinguished and recognized according to the output of the image reading section on the basis of an area recognition threshold value" in Ohkawa paragraph 16, line 4).

Regarding claim 7, the estimated document area determination section determines an effective image area of each of a plurality of scan lines based on information regarding an area where not less than a predetermined number of pixels which are judged as having the document image existing therein by the comparison section are continuously lined up in each scan line, and determines a smallest rectangular area that includes all the effective image area of each scan line as the estimated document area (as depicted in Ohkawa figure 14, the dashed THL is a scan line along the primary scanning direction. In the middle of the scan line is the document area that is the effective image area determined after comparison section. The estimated document area is described in paragraph 135-137. As illustrated in figure 8(b), the estimated document area BL is the "minimum quadrangle including the document SI" in paragraph 132, line 4).

Regarding claim 8, the estimated document area determination section determines an effective image area of each of a plurality of scan lines based on

information regarding an area where not less than a predetermined number of pixels which are judged as having the document image existing therein by the comparison section are continuously lined up in each scan line, and determines an area included in both the effective area in a previous line and the effective area in a current line as the estimated document area of the current line (as depicted in Ohkawa figure 14, the dashed THL is a scan line along the primary scanning direction. In the middle of the scan line is the document area that is the effective image area determined after comparison section. The estimated document area for each scan line is described in paragraph 140-142. Each scan line after comparison "is stored in the area storing memory JJM respectively as area information" in paragraph 140, line 9. The final estimated document area SR is illustrated in figure 8(c)).

Regarding claim 14,

the image data generating portion further generate image data of a third color component (discussed in claim 1, layered image generation section plurality of document areas, first, second, and third estimated document areas, are formed); the estimated document area determination portion further determines a third estimated document area based on a comparison result between each of pixel values of the image data of the third color component and a third threshold value (discussed in claim 1, estimated document area determination section and comparison section for plurality of document areas, first, second, and third estimated document area, determination);

the document area detection portion detects the document area based on the first estimated document area, the second estimated document area, and the third estimated document area (the combination of Haraguchi and Ohkawa teaches the document area detection based on plurality of estimated document areas).

Regarding claim 15, the document area detection portion detects an OR area between the first estimated document area and the second estimated document area as the document area (discussed in claim 2, the document area will include not just one particular color area but any one of the estimated document area of plurality of layered image data, i.e. the OR area, in order to have a better coverage).

Response to Arguments

a. Summary of Applicant's Remark:

The previous drawing objections should be withdrawn in view of the amendment.

Examiner's Response:

Examiner agrees, and the previous objections are withdrawn.

b. Summary of Applicant's Remarks:

"Instead, Haraguchi et al merely relates to only reading color chips to obtain spectral densities of R(red), G(green) and B(blue), and is entirely unrelated to the

claimed present invention and not properly combinable with Ohkawa" at response page 15, line 6.

Examiner's Response:

As stated at Haraguchi column 4, line 26: "... a color image is read by an image reading apparatus in a way of reflected light and a print is made by an image forming apparatus based on spectral density the color image read by the image forming apparatus in the wavelength region of each primary color". Refer to the rejections above.

c. Summary of Applicant's Remarks:

"however, that Ohkawa does not disclose, teach or suggest generating a plurality of pieces of layered image data with respect to detecting a document area in a color image, as according to the claimed present invention" at response page 15, line 13.

Examiner's Response:

It is the combination of Haraguchi and Ohkawa teaches the invention.

d. Summary of Applicant's Remarks:

"commonly owned by the assignee of the present application" at response page 14, line 10, and page 15, line 10.

Examiner's Response:

It is important to recognize that 35 U.S.C. 103(c) applies only to consideration of prior art for purposes of obviousness under 35 U.S.C. 103. It does not apply to or affect subject matter which is applied in a rejection under 35 U.S.C. 102 or a double patenting rejection. In addition, if the subject matter qualifies as prior art under any other subsection of 35 U.S.C. 102 (e.g., 35 U.S.C. 102(a) or (b)) it will not be disqualified as prior art under 35 U.S.C. 103(c). Reference to MPEP 706.02(l) for details.

Conclusion

4. Applicant's amendment is rejected in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eueng-nan Yeh whose telephone number is 571-270-1586. The examiner can normally be reached on Monday-Friday 8AM-4:30PM EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EY.
Eueng-nan Yeh
Assistant Patent Examiner
2624



VIKKRAM BALI
PRIMARY EXAMINER